Appendix C

DESCRIPTION OF CONSTRUCTION ACTIONS

Cable Removal Techniques. The cable would be removed using plowing, trenching, or pulling methods, as described below. It is expected that most of the cable can be removed by plowing. The trenching method would be used when the plow method fails or when the coaxial cable makes a sharp change in direction (e.g., the repeater huts are accessed by a 90-degree deviation from the right of way). Plow methods typically fail when the cable depth exceeds 5 feet or the substrate is rocky. Based on the rocky conditions identified along the New Mexico segment of the project route, most of the cable would be removed by trenching. Additional segments in California and Nevada are also likely to require trenching. Pulling methods would be employed in areas where the cable is encased in a PVC or steel conduit, and would be attempted when plowing methods fail in major wash areas. Because the cable removal activity would follow the original right of way, no additional cut and fill or grading is anticipated. No blasting should be required. A graphical presentation of each removal method is provided in Figure C-1; Examples of Cable Removal Techniques. The removed cable would be cut into sections and transported by truck to a certified recycling facility.

Plowing — When removing the cable by plow, a pre-rip Cat would loosen the soil directly over the cable; then a plow Cat fitted with a specialized shank would pass over the cable and lift it from the ground. A backhoe would be used to dig cable access pits. The cable chop truck would follow the plow Cat. Surface and near-surface disturbance would be limited to the approximate width (12 feet) of the pre-rip Cat, the plow Cat, and associated equipment. Subsurface disturbance would be approximately 5 feet deep by 2.5 feet wide. Where feasible, the backhoe and the cable chop truck would travel along the access corridor to avoid disturbing vegetated portions of the right of way.

Trenching — Trenching would consist of using a backhoe to expose the cable and to stockpile associated spoils along the trench. The width of the bucket used for trenching would range from 18 inches to 24 inches depending on soil conditions. The width of the trench would depend on the cable depth and soil conditions. A practice commonly known as "double trenching" would be used to remove the cable in trench areas. A backhoe would be used when double trenching, to segregate 4 to 6 inches of topsoil from the subsoil by placing the topsoil on one side of the trench and the subsoil on the other side. This will allow maintenance of the original soil profile when backfilling. Where trenching is necessary on steep slopes, erosion control measures such as trench plugs will be placed in the trench at every 20 foot drop in elevation.

Following cable removal, the subsoil material from the excavation would be used to backfill the bottom portion of the trench and compacted to 85 percent of maximum density in acccordance with ASTM D698 by vibration and possibly other methods. The surface material would be spread across the right of way to maintain the original soil profile and provide a seed source. No compaction would occur within the top 24 inches of the trench. The cable chop truck would follow the trenching backhoe and would use the access corridor whenever feasible.

Pulling — Where the cable is housed in a steel or PVC conduit (i.e., at major road or utility crossings), the cable would be removed by pulling methods. To remove the cable, a pit would be excavated at both ends of the conduit to expose the cable. Topsoil would be segregated as noted above for trenching. The cable would be cut and a wrenching machine used to pull the cable from the conduit. The ends of the conduit would be sealed and the casing left in place. The pits would be backfilled with existing spoils. Subsurface material would be used to backfill the bottom portion of the pits and compacted to 85 percent of maximum density. No compaction would occur in the top 24 inches of the pits.

Pulling methods would also be attempted at four paved road crossings where the cable is not housed in a conduit (Kelbaker Road, Kelso-Cima Road, Fort Irwin Road, and Clay Mine Road), and in major wash areas where the plow method fails. If the cable could not be pulled, it would be removed by trenching.

Structure Removal Techniques. Aboveground structures and belowground equipment/electronics would be removed and disposed of properly. Holes would be cut into the below-grade concrete floor to allow drainage. The top 3 feet of the concrete walls (the first 3 feet below grade) would be broken down and piled on the vault floors. The remaining foundation, walls, and floor of each vault would be left in place. Subsurface vaults would then be filled in, using on-site sand and gravel originally removed during installation of the structures. Hut site berms will be graded as part of rehabilitation. Topsoil will be used to spread on the hut site itself, while subsoil will be used to fill in hut vaults. If additional material is needed, imported supplies would be used.

The area of disturbance at each repeater hut would be kept within the 100-foot by 100-foot hut sites. The area of disturbance at each manhole would be within the cable right of way.

Rehabilitation Actions

The NPS has identified a range of rehabilitation actions which represent different degrees of, and approaches to, land restoration as a prerequisite to easement termination. Because the original grants for the right of way on federal lands do not include specific rehabilitation measures (BLM 1963, BLM 1963a, BLM 1964), the NPS has identified a range of rehabilitation actions that may be implemented. A range of actions would be implemented at the repeater hut sites and along the access corridor depending on location-specific conditions, the potential efficacy of rehabilitation, and costs. Rehabilitation actions will also vary depending whether affected lands are within the jurisdiction of the NPS or the BLM. The final rehabilitation actions included in each federal agency's permit for the Proposed Action will identify site- and agency-specific requirements for the NPS, as the federal lead agency, and BLM, as the primary land manager, outside the Mojave National Preserve. Rehabilitation measures for the repeater hut sites and the access corridor are described below and are summarized in Table C-1; Summary of Actions Common to All Action Alternatives.

Because the right of way has partially recovered since the original installation of the system, no rehabilitation measures are proposed for the right of way where the cable is to remain in the ground. Removal of the cable would have impacts on desert vegetation, and mitigation for this action is discussed in Appendix G.

Repeater Hut Site Rehabilitation. Measures to rehabilitate the 55 repeater hut sites include:

Grading — The repeater hut sites would be graded to an approximate natural contour. Topsoil on berms would be spread on the repeater hut sites to assist in revegetation. The remainder of the soil from the berms would be used to fill in the repeater hut vault and the berm area graded to an approximate natural contour.

Decompaction — The entire cleared area at each site where a repeater hut is removed would be deep-tilled to 12 inches.

Soil Preparation/Water Management — Gravel or plant mulch may be spread on the site.

Access Control — Where rehabilitated locations of former repeater huts are adjacent to an access corridor that will remain in use, a combination of access control reasons (such as locally available boulders, re-planting of existing Joshua trees where present, vertical mulch, posts, and/or signage) will be used to reduce unauthorized use/disturbance of the sites.

In addition to some or all of the measures listed above, rehabilitation could also include:

Seeding — Seed from an approved source could be used at the repeater hut sites to promote revegetation.

Live Plantings - Collection of locally available seed from the two co-dominant species, growing of seed to maturity at an off-site nursery, construction of microcatchment basins to improve water retention, and plantings to 100% densities at those federally owned repeater hut sites where access would remain.

Watering and Maintenance - Where access to repeater hut sites remains, watering twice monthly during the hot season and maintenance to control exotics for up to 2 years.

Monitoring — Monitoring of live planting sites for 5 years.

Because of the variable success rates associated with live plantings in the desert and the susceptibility of rehabilitation to external factors such as precipitation, the NPS has identified an alternative approach to rehabilitation on lands within the Mojave National Preserve only. This approach would be implemented in combination with some or all of the other rehabilitation measures and would consist of land compensation in lieu of some or all of the other measures. If compensation is selected as part of the final rehabilitation action, the NPS would determine the amount of compensation as part of the site-specific permit for the project.

Access Corridor Rehabilitation. Measures to rehabilitate the access corridor include:

Decompaction — Where the corridor or a dual track is to be eliminated, it would be deep-tilled (ripped with a D7 CAT/ripper) to decompact the soil and provide a growing medium for revegetation. The CAT/ripper would rip on 2-foot centers, to a depth of 12 inches for the entire width of the compacted bed.

Soil Preparation/Water Management — Berms on the side of the corridor or dual track elimination segments would be graded to improve drainage. Top soil from the berms will be spread on the corridor. Following decompaction, a rubber-tired tractor would pull a chain drag to churn up the top several inches of the disturbed surface, break up solid lumps of soil and establish a rough surface. Where the corridor is to remain open for access, berms would be cut periodically to allow drainage.

Access Control — Access to the corridor at the start and end of elimination segments and at crossings of secondary dirt roads would be controlled by the use of a combination of access control measures, such as locally available boulders, re-planting Joshua trees where present, vertical mulch, posts, and/or signage, as approved by regulatory agencies. Access to eliminated dual tracks would be controlled by the use of posts, signage, or fencing.

In addition to some or all of the measures listed above, rehabilitation measures for access control could also include:

Seeding — Seed from an approved source could be used at access control sites to promote revegetation.

Live Plantings - Collection of locally available seed from the two-codominant species, growing of seed to maturity at an off-site nursery, construction of microcatchment basins to improve water retention, and plantings to 100% densities at heavily traveled access control points. Plantings would occur for the first 100 feet of the corridor from the control point or for a reasonable distance to camouflage the presence of the corridor.

Watering and Maintenance - Watering twice monthly during the hot season and maintenance to control exotics for up to 2 years.

Monitoring — Monitoring of live planting sites for 5 years.

Because of the variable success rates associated with desert and the susceptibility of rehabilitation to external factors such as precipitation, the NPS has identified an alternative approach to rehabilitation on lands within the Mojave National Preserve only. This approach would consist of land compensation in lieu of some or all of the other measures. If compensation is selected as part of the final rehabilitation action, the NPS would determine the amount of compensation as part of the site-specific permit for the project.

Other Construction Methods

This section describes other construction methods and practices that would be part of any action alternative. These methods and practices are summarized in Table C-1; Summary of Actions Common to All Action Alternatives.

Construction Area Limits. All construction equipment activity would take place along the project route and use the existing right of way, the repeater hut sites, the access corridor, and currently disturbed areas such as publicly used roads to reduce the impact on desert soils, vegetation, and habitat. To support this effort, the right of way would be flagged on a line-of-sight basis (200 feet maximum) prior to construction.

Equipment Used and Staging Areas. Construction equipment would be staged nightly on the coaxial cable right of way and on repeater hut sites at, or near, the current point of action. The repeater hut sites would also be used for equipment fueling and lubrication. Waste oil products (and any other waste materials) would be removed from the job site and disposed of according to applicable regulations. No additional federal land would be cleared for the staging areas.

Typical equipment that would be used by the construction teams is listed below. The precise equipment used by each crew would depend on actual field requirements and the contractor's operation.

Plow Crew — One backhoe, one pre-rip CAT (D7), and one plow CAT (D8)

Trench Crew — Two backhoes and one compactor

Pull Crew — One backhoe and one wrenching machine

Cable Chop Crew — One hydraulic cable cutter, several 10 cubic yard (cy) dump trucks, one loader, and one semi-tractor trailer

Structural Removal Crew — One trackhoe equipped with a hydraulic hammer, one backhoe, several 10 cy dump trucks, and one semi-tractor trailer

Rehabilitation Crew — One road grader, one dump truck, one loader, one D7 CAT/Ripper, and one rubber-tired tractor/pitter

Supervision/Transportation — Approximately 12 to 15 supervisor trucks

Access Routes and Traffic Maintenance. The construction crews would access the cable right of way and permanent structures via the access corridor, existing public roads, and other existing routes. Equipment and support vehicles would remain on the coaxial cable right of way, the access corridor, or the repeater hut sites. Because of the access corridor and the availability of existing roads for access, no new roads would be established and no other roads would be altered to provide access for cable removal activities. In New Mexico, pre-existing roads between the public roadway and the project right of way would be utilized under temporary authorization for temporary access to the right of way during construction (see Figure C-2: Preexisting Access Points). Vehicle speeds along all unpaved roads used for access would be limited to 25 miles per hour.

Where cable removal at road crossings requires surface cuts, traffic would be managed in accordance with the road encroachment permits identified in Appendix I. Material stored would be positioned and work would be conducted to reduce obstruction and inconvenience for the traveling public. Where necessary to divert traffic around construction areas, appropriate signage, barricades, flag persons, or other devices would be used, as required by the *Manual on Uniform Traffic Control Devices for Streets and Highways* (U.S. Department of Transportation, Federal Highway Administration, 1988), and applicable Department of Transportation standards would be used. Roads that are plowed or trenched would be compacted to the permitting agency requirements.

Material, Refuse, and Waste Disposal. The coaxial cable would be collected during the removal, stockpiled at approved on-site locations or off-site locations, and then transported to certified recyclers.

Equipment in the repeater huts and manholes would be removed from the site and recycled or disposed of as solid waste at permitted facilities. No hazardous materials are contained within repeater huts or manholes, and thus, disposal should not result in any potential releases of hazardous materials. MPs and tin repeater huts removed from the cable right of way would become the property of the construction contractor. Removed MPs and tin repeater huts would not be used by the contractors for any part of this project's activity and would be removed from the project site. Vegetation and soil disturbed during plowing, trenching, or pulling operations would remain on the right of way. Soil disturbed during plowing would be graded over the furrow. Soil and rock disturbed during trenching would be placed back into the trench to maintain the original soil/rock profile.

Trash and food items would be contained and removed from the work area at the end of each work-day. Domestic animals would be prohibited from the work area.

Because of the remoteness of the cable route, the construction crews would use portable toilets to contain human waste. These toilets would be secured to prevent them from attracting wildlife. No residual materials from construction vehicles would be left on the coaxial cable right of way or at the permanent structure locations. All materials would be removed from the site and disposed of at appropriate facilities, as required by applicable regulations.

Health and Safety. AT&T's construction contractor(s) would establish a health and safety plan for the project to address the potential health and safety issues for project workers and for nearby residents or land users. This health and safety plan would address valley fever, heat stress, and other health and safety issues particular to this project.

No blasting is anticipated during the project; thus, no handling or use of explosives is expected. Fuels, lubricants, and solvents would be stored in marked containers, appropriate to their contents. Firearms would be prohibited from the work area.

Construction practices would follow the recommendations of the Associated General Contractors of America's (AGC's) *Manual of Accident Prevention in Construction* and the *Standard Specifications for Outside Plant Cable Construction or Removal*, as prepared by AT&T regarding fire hazards and prevention. Construction supervisory personnel and a sufficient number of workers would be instructed in proper methods for extinguishing fires and would be assigned specific fire protection duties. Combustible debris and waste materials would be removed from the right of way each day. As noted above, fuel, solvents, and other volatile or flammable material would be segregated at designated staging areas in appropriate well-marked containers.

Although hazardous material is not expected to be encountered in the right of way, if such material is encountered, appropriate state or federal officials would be notified and consulted to determine appropriate handling procedures.

Work Crews and Schedule. Removal and rehabilitation actions are expected to require up to 4 months of construction activity for any of the Action Alternatives. AT&T expects to divide the project into three contract spreads that would be awarded to competitive bidders: one New Mexico segment, one Nevada/California

segment, and one California-only segment. A typical contract spread would have between 25 to 35 construction employees. Crew tasks would include cable plowing/trenching/pulling, cable chopping, structural removal, access elimination, rehabilitation, and supervision. Cable removal would advance 1 mile to 5 miles a day depending on soil conditions and whether plowing, trenching, or pulling techniques are implemented. Construction activities typically would occur 6 days a week (Monday through Saturday) and are based on a 10-hour day. No Sunday or holiday work would occur. Daylight hours are the normal hours of operation.